Further progress was clearly impossible without an amendment of the Constitution, which could only be secured by a referendum. It was decided to hold a referendum at the same time as the General Election of the 28th September, 1946. The result was the approval by the necessary majority of electors, in a majority of the States and in the Commonwealth as a whole, of an amendment to extend the Commonwealth's powers to cover "the provision of maternity allowances, widows' pensions, child endowment, unemployment, pharmaceutical, sickness and hospital benefits, medical and dental services (but not so as to authorize any form of civil conscription), benefits to students and family allowances."

The result of the referendum has removed the danger of any legal challenge to the Commonwealth's social security legislation, and has removed any doubt about the Commonwealth's powers to proceed with the establishment of a National Medical Service. The free medicine scheme will undoubtedly be re-introduced, but it will now become part of a more comprehensive plan. The Commonwealth Government is proceeding with its plan to establish free medical centres, and it is reported that it may re-open negotiations with the British Medical Association. The Government hopes, however, that a sufficient number of doctors will be available to staff its centres even if no agreement can be reached with the British Medical Association, and it has announced its intention of proceeding with an ambitious long-range plan of training its own doctors.

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It will be seen from the foregoing that the health and social services introduced in the last few years or planned for the immediate future are sufficiently extensive to revolutionize the existing social set-up in Australia. It is doubtful whether anyone, even in Australia, yet realizes the full implications of these changes, for they have hitherto been overshadowed by events in the international sphere. Should a depression occur, however, the value of these new social services will immediately become apparent, provided that the administrative and financial machinery that has been evolved, proves adequate to stand such a strain.

Dentistry's Role in Public Health

By JOHN OPPIE MCCALL, DDS

IT is generally accepted that a relationship exists between dental health and general health,—that dental disease may adversely affect general health. If this is so the prevention and treatment of dental disease assumes a place in the public health program along with measures for the control of other diseases.

Extent of Dental Disease

The first point of inquiry, then, is about the extent and severity of dental disease in the population. The only comprehensive surveys made have been limited to children. These have a broad application, however, since dental disease starting in childhood tends to continue into adult years and with increasing damage to the dental structures. A country-wide survey in 1933, initiated by the U.S. Public Health Service, a city-wide survey in St. Louis some years later and numerous smaller surveys in other communities all agree in placing the percentage of children in the United States affected by dental decay at more than 90 per cent. At the Guggenheim

EDITOR'S NOTE: Dr. McCall was for many years connected with the dental clinics for children of Greater New York set up by the Guggenheim Foundation.

Dental Clinic in New York City examinations of large numbers of children have shown more than 95 per cent affected by dental decay.

The first draft of World War 11 gave an opportunity to find out how much damage dental disease was causing in the adult population. In the physical examinations it was found that dental defects forced the rejection, on the basis of even extremely lenient specifications, of 10 per cent of all men examined. Dental defects outranked all other causes of rejection. No figures were given as to the extent of dental disease among those who passed the dental test. Later experience in the services indicated, however, that it was very great.

Amount of Dental Care Needed

It is evident, then, that dental decay and other oral disease is very prevalent and is causing very extensive damage. Hillenbrand*summarizes the situation in terms of need for dental treatment, basing his estimates on reports of responsible dental investigators: American children between 6 and 18 (estimated at 30 millions) need at the outset of a program 244 million fillings and 33 million fillings annually thereafter for maintenance. American adults would need 285 million fillings to begin with and 79 million fillings a year thereafter.

These estimates deal with fillings only. The amount of damage to masticating efficiency and the amount of chronic infection related to dental disease implied by these figures can only be guessed at but is unquestionably very great. If it is accepted that dental disease may and often does affect health adversely it is logical to expect appropriate action by both physicians and dentists,—by physicians because anything affecting health lies in their domain; by dentists because they have the knowledge and training to deal with the special problems presented.

*Hillenbrand, H., Dental health for the American people New York Journal of Dentistry, Vol. 15, pp. 143-152 April, 1945

The Present Situation

What is the situation?—relative and often complete neglect of the dental phase in many programs set up to deal with the total health program. For example,—a well known university in the Eastern United States recently announced very ambitious plans for the creation of a medical center. The plan as announced made no provision for a building for the dental school although the medical school was well provided for. Again,—programs for health care set up in various voluntary insurance plans make little or no provision for dental service in either the curative or preventive aspects of such dental service in either the curative or preventive aspects of such plans.

On the other hand, health departments and boards of education in many cities and states do provide a certain amount of dental services as part of their health programs. The Veteran's Administration gives certain dental benefits to ex-service men.

The picture is confusing, especially when viewed in the light of the acknowledged potentialities of dental disease as a health hazard. The following factors, among others, contribute to that situation:

1. Lack of exact and definite knowledge of the harm to health that may be caused by dental disease.
2. Low mortality and apparent low morbidity resulting from dental disease related to its high incidence in the population.
3. Apathy of the public through lack of worthwhile information.
4. The high cost of a comprehensive dental program.

Effects of Dental Disease

Consideration of the problem may well start with fundamentals. First is the fact that the prime function of teeth is mastication of food (it seems safe to assume that mastication of food

is a factor in health and well-being). Logically it should be a fact that a defective masticating machine would be a direct cause of a lowered bodily condition. That this is true in the case of the lower animals is demonstrable. Man's ingenuity has circumvented this regulation of nature to a considerable extent by the invention of the process of cooking which he applies to much of his food. He thereby reduces to a great extent the need for mastication as a preparation for digestion. Those who wish to minimize the importance of mastication can point to many elderly people who have lost all their teeth, have not had them replaced with artificial ones, yet live on and on. The fact is that that is about all these toothless people do. It is fairly well accepted, however, that to follow occupations requiring heavy physical effort, there must be an intake of some foods that require mastication and teeth with which to chew them.

Items possibly secondary in over-all importance but to be reckoned with, nevertheless, are:

1. The direct effects of acute dental infections, with death as an occasional sequel.
2. The deleterious long-range effects on the system of chronic infections established in or around the teeth.
3. The psychosomatic effect of pain of dental origin.
4. The psychological effect of disfigurement resulting from tooth irregularity or the loss of anterior teeth.

The question is not,—does dental care belong in the public health picture? The real question is,—how to bring dentistry into public health in a way that will make dental care a health asset throughout life and at not too great a cost.

The natural approach to a solution of this problem is along the line of prevention. This avenue has been explored by dental research workers since the early 1880's with distressingly small results so far, however. Lack of interest by the public and the relatively small grants for research, whose paucity can largely be traced thereto, has been claimed as the outstanding reason for lack of results. In other words, it is believed that the discovery of positive means for preventing dental disease can, in effect, be purchased if some one will finance the research adequately.

Dental Care Effective but Costly

As it is, dentistry has learned at least how to limit the encroachment of dental disease through the filling of cavities and treatment of disorders of the surrounding tissues of the teeth. The results of its accomplishments in these fields are maintenance of masticating efficiency and prevention of tooth-ache and dental infection.

This would be quite satisfactory if it were not for two unfortunate facts. One is the amount of dental decay in the population. Cavities begin to form in the teeth of many children between two and three years of age and new ones occur at the rate of not less than 1.3 each year up at least sixteen years, and at a reduced rate thereafter. Ultimately over 90 per cent of American children are so affected as stated before. Inflammation and infection of the gums leading to so-called pyorrhea and loss of teeth are quite common in adults. All this adds up to the need for a tremendous amount of corrective treatment not just once in a while but year after year.

The second unfortunate fact is that dental care is expensive in terms of the amount and quality of the professional education needed to train dentists adequately, the cost of the equipment required for rendering dental service and the amount of time consumed in the performance of the various operations.

Lack of appreciation of the health value of dental care has resulted in widespread neglect of teeth and a consequent unknown but undoubtedly tremendous amount of accumulated dental defects in the present adult American population. To attempt to put comprehensive

dental care for all people into any general health insurance plan, either voluntary or governmental, is obviously out of the question, both on the grounds of expense and because dentistry does not at present have sufficient personell for the task.

Children's Dentistry the Starting Point

Current public health planning in the dental profession is therefore concentrated on a service program for children. The proposed program would start with all children at a certain age and would keep them under care on an increment basis, adding each year the new children of the starting age. Calculations are based on the expected increment of 1.3 cavities per year. Experience in a large dental clinic indicates that to express annual dental needs in terms of fillings only is an oversimplication of the problem, both quantitatively and qualitatively. The objective of the program is, of course, to bring up to adulthood a nation of individuals who will have a normal complement of healthy teeth and who will presumably need relatively little dental care annually from the late teen years on.

Dental Disease a Public Health Problem

If dental disease had no deleterious effect on general health it might be permissible to follow the program just stated, omitting, and condoning the omission of, dental care from health insurance and general health care programs. But dental disease and its sequelae do affect the health of adults as well as children. Putting aside the effects of moderate loss of masticating power and of chronic but more or less compensated chronic dental infections, there is a considerable amount of demonstrable health injury traceable to acute dental infection, traumatic damage and gross loss of masticating ability; this latter group of dental ailments is continously in evidence in the population although on a relatively small scale. Such dental conditions, under the rating of emergencies could and should be made subject to insurance or other health benefits. This would be practical as well as medically desirable since there are enough dentists now in practice to give such emergency service.

Solving the Child Care Problem

Dentistry has a role in public health today and an increasing sphere of activity in the future as knowledge, facilities and personnel become augmented. The big program is undoubtedly that for children. Arguments now put forth that more dentists should be trained so that both children and adults can receive proper dental care omit, however, consideration of the economics involved. Dental care as it must now be given is expensive. An important factor in this is the amount of time required to to give complete training to dentists. But most of the attention needed by children is the filling of cavities which is only one branch of dental practice. It would seem logical that personnel be trained to care only for the cavities in children's teeth. Extractions, when needed, could be done by dentists as, also, the more complicated operations sometimes required. The result would be an important economic as well as health gain.

New Zealand has pioneered in this field and has had a program of training "school dental nurses" and of service by these women, in operation for over twenty years. Both the dental profession and public health authorities in that country express approval of the program. Objection has been voiced to the introduction of such a program in this country, based on the assumption that adequate training for this work cannot be given in a course short enough to assure worthwhile economy. This argument does not stand up if the time schedules for various subjects in American dental colleges are studied. Two years training as in New Zealand should be adequate.

Many dentists do not care to give much, if any, of their time to children's dentistry. A factor in favor of setting

up a special program for training women for children's dental care is that personnel thus trained would take a special interest in the work.

Restrictions on the practice of such specially trained auxiliary workers would be needed. Their service could be limited to school programs carried out in clinics under proper supervision. They would be licensed and registered as to where employed and answerable for attendance during working hours.

It would seem to be an obligation of dentistry to explore all reasonable avenues by which more dental service with the greatest attainable economy could be made available to the public. However, the basic question is whether dentistry really belongs in the public health picture. When the public health profession, both administrators and medical personnel, is convinced that it does, ways will surely be found for the solution of the problem.

Vocational Guidance: An Instrument of Social Policy

By Donald E. Super

THE economic and political problems of the past fifteen years have conspired, in different ways at different times, to make those who are concerned with public and individual welfare turn to vocational guidance and ask what contribution it might make to the solution of the problems at hand. In the early '30's it was the problem of unemployment and enforced leisure which focussed attention on vocational guidance, and raised the question as to how it might alleviate the situation by helping individuals make better use of their abilities and by increasing occupational mobility through dissemination of information about opportunities. The result was shown in a number of studies of the vocational adjustment problems of young people[1] and other special groups; in co-ordinated studies of the abilities and attitudes of the unemployed, of employment needs and trends, and of the counseling and retraining of the unemployed,[2] and in an extraordinary development of public employment and vocational consultation services.

At the end of the decade the beginning of World War II reversed the situation, and instead of having to cope with a problem of individual vocational adjustment, unused human resources, and a shortage of employment opportunities, we were faced with the problem of the most effective use of abilities and training in industries and military services which were constantly demanding more and more manpower. The question was, then, what contribution vocational guidance could make by working with personnel organizations in order to help individuals put their skills to use where they would be of most value. Many men and women who had been engaged in vocational guidance in schools and universities therefore shifted to personnel work in war industries and in the armed forces, and those who remained in schools and employment services devoted much of their time and energy to facilitating the flow of manpower to the places at which it was most needed. Some organizations whose functions had been in the borderland between vocational guidance and personnel work now became primarily manpower utilization agencies, as indicated by the placing

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